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EXAMINER	
TRUONG, CAMQUY	

ART UNIT	PAPER NUMBER
2195	

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/002,073	SHAFFER, LARRY J.	
	Examiner	Art Unit	
	Camquy Truong	2195	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *06 April 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-3,5-16 and 18-29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-3, 5-16, 18-29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-3, 5-16, 18-30 are presented for examination. Claims 4 and 17 have been cancelled.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter, which the applicant regards as his invention.

3. Claims 15-16, and 18-21, are rejected under 35 U.S.C 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

A. The following terms lack proper antecedent basis:

i. The said first capability of second processor and said first capability of said first computer processor – claim 15, lines 10-14;

B. The claim language in the following claims is not clearly understood:

i. As to claim 15, lines 8-9, it is not clearly indicated what is the relationship between " a first processor load value", " a first maximum capability of a first computer processor" in line 3 (i.e. a first processor load value of a first processor or the receiving task has an associated load requested); Line 11, it is not clearly indicated whether " said first capabilities of said second computer processor" refers to "a second maximum capabilities of a second processor" in line 4; Lines 13-14, it is not clearly indicated whether " said first capability of said

first computer processor" refers to " a first maximum capability of a first computer processor" in line 2.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5. Claims 1-3, 5-12, 14, 22- 27 and 29-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsu (U.S. Patent 6,104,721) in view of Odhner et al (U.S. Patent 6,862,623 B1).

6. Hsu and Odhner were cited in the previous office action.

7. As to claim 1, Hsu teaches the invention substantially as claimed including a method for dynamically allocating tasks in a computer system (col. 1, lines 10-12) comprising:

Assigning a computer resource requirement to a task (dynamically allocating resources of the processing bank of board based on the required amounts of digital signal processing indicated by the call setup requests, col. 2, lines 48-51; col. 3, lines 43-45; col.5, lines 57-59; col.6, lines 3-5 and lines 14-18);

Assigning said task to a selected one of said plurality of computer platforms (col. 3, lines 20-22, lines 32-35 and lines 45-52; col.6, 30-32; col. 10, lines 11-14; col. 13, lines 37-42), wherein said task is assigned to said selected computer platform based on said resource requirement of said task and said maximum resource load of said selected platform (col. 5, line 57- col. 6, line 26); and

Performing said task in connection with said selected computer platform (col.6, lines 26-32; col. 13, lines 43-46).

8. Hsu does not explicitly teach that assigning a maximum computer resource capability and load to each of a plurality of computer platforms, wherein a first of said computer platforms has a first maximum computer platform load and a second of said computer platforms has a second maximum resource capability and load; and a computer resources table, wherein indications of maximum computer resource capabilities for each of said plurality of computer platforms are maintained; and referencing said computer resources table for maximum computer resource capabilities of at least one of said plurality of computer platform. However, Odhner teaches assigning a maximum computer resource capability and load to each of a plurality of computer platforms, wherein a first of said computer platforms has a first maximum computer platform load and a second of said computer platforms has a second maximum resource capability and load (col. 5, lines 14-54; col.11, lines 56-65); and a computer resources table, wherein indications of maximum computer resource capabilities for each of said plurality of computer platforms are maintained (each load

table value representing a maximum load handled by one or more servers, col. 5, lines 14-54; col. 11, lines 56-65); and referencing said computer resources table for maximum computer resource capabilities of at least one of said plurality of computer platform (col. 6, lines 41-53).

9. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Hsu and Odhner because Odhner's assigning a maximum computer resource capability and load to each of a plurality of computer platforms, wherein a first of said computer platforms has a first maximum computer platform load and a second of said computer platforms has a second maximum resource capability and load; a computer resources table, wherein indications of maximum computer resource capabilities for each of said plurality of computer platforms are maintained; and referencing said computer resources table for maximum computer resource capabilities of at least one of said plurality of computer platform would increase the efficiency of Hsu's system by allow tasks to be allocated to corresponding processor based on the capability of processors to enable managed more cost effectively.

10. As to claim 2, Hsu teaches first computer platform load is not equal said second computer resource load (col. 3, lines 5-8 and lines 17-20; col. 9, lines 60-62; col.10, line 54-col.11, line 7; col. 10, lines 24-27).

11. As to claim 3, Hsu teach assigning a computer resource requirement comprises assigning a point value to said task (col. 2, lines 48-51; col. 3, lines 43-45; col.5, lines 57-59; col.6, lines 3-5 and lines 14-18).

12. As to claim 5, Hsu teaches each of said plurality of computer resources reports a maximum computer resource load amount to said table prior to said step of assigning a task (col. 10, lines 32-35).

13. As to claim 6, Hsu teaches a task is not assigned to a computer platform if doing so would cause said indication of a computer resource load amount of said computer platform to exceed a maximum computer resource load associated with said computer platform (col. 10, lines 42-43; col. 13, lines 6-12).

14. As to claim 7, Hsu teaches first computer platform is assigned said task, wherein a maximum computer resource amount associated with said computer platform is exceeded, and wherein said first computer resource rejects said assigned task (col. 9, lines 54-56; col. 10, lines 42-43; col. 13, lines 6-12).

15. As to claim 8, Hsu teaches task is assigned to said second computer platform after said rejection of said task by said first computer platform (col. 10, lines 42-47; col. 13, lines 17-22).

16. As to claim 9, Hsu teaches classifying said task by type (col. 3, lines 35-36).

17. As to claim 10, Hsu teaches providing a computer resources table, wherein an indication of a computing resource load and of a task capability for each of said plurality of computer platforms is maintained in said table (Fig.3; Fig. 4; col. 3, lines 17-37; col. 9, lines 31-46).

18. As to claim 11, Hsu teaches task is assigned to a computer platform listed in said computer resources table according to said computing load and said task capability (col. 3, lines 17-37).

19. As to claim 12, Hsu teaches wherein said computer platforms comprise at least one of a processor, an input/output port, an area of memory, and an allocation of bandwidth (col. 7, lines 8-12).

20. As to claim 14, Hsu teaches altering at least one of said plurality of computer platforms, wherein said step of altering comprises at least one of adding, removing, and modifying said at least one computer resource associated with said computer platform (col. 3, lines 27-29; col. 6, lines 26-29 and col. 10, lines 25-30).

21. As to claim 22, it is rejected for the same reason as claim 1. In addition, Hsu teaches at least a first computer platform comprising at least a first computer resource

and a second computer platform comprising at least a second computer resource (col. 2, lines 20-27; col. 3, lines 17-19), wherein said at least a first computer platform has a first task type capability and a first resource amount capability, wherein said second computer platform has a second task type capability and a second resource amount capability, wherein said first and second task type capabilities do not have to be the same, and wherein said first and second resource amount capabilities do not have to be the same (col. 2, lines 20-27; col. 3, lines 20-27);

Processing software running on a server processor, comprising:

Memory including a table (the LRC table in local memory, col. 14, lines 51-54), wherein said first and second resource amount capabilities of said first and second computer platforms are stored in said table (col. 9, lines 31-39 and lines 41-65); and

a software task allocation unit (col. 3, lines 38-40; col. 9, lines 20-22), operable to reference resource amount capabilities in said table and further operable to allocate a task (col. 9, lines 31-65) to a selected one of said first and second computer platforms based on said task type capability and said referenced resource amount capability (col.6, line 12-32; col. 9, lines 42-65; col. 10, lines 11-16), and wherein a task is completed in connection with said selected one of said first and second computer platforms having a task type capability required to complete said task and a resource amount capability sufficient to complete said task (col. 3, lines 40-46; col. 9, lines 64-65; col. 10, lines 36-41).

22. As to claim 23, Hsu teaches software task allocation unit further comprises: a software table, wherein an entry for said at least a first computer platform is maintained

in said table, and wherein for each such entry a task type capability and a task resource amount are specified (col. 3, lines 17-37; col. 9, lines 31-37).

23. As to claims 24-26, Hsu teaches task resource amount is dynamically altered in response to a change in a resource amount capability of said at least a first computer platform (col. 10, lines 30-36).

24. As to claim 27, Hsu teaches altered performance characteristic comprises at least one of a frequency of operation, an operating voltage, and a rate of instructions (col. 15, liens 11-18).

25. As to claim 29, it is rejected for the same reason as claim 12.

26. As to claim 30, Hsu teaches at least one of types of tasks that said plurality of computer platforms are capable of performing (col. 3, lines 24-27) and current loads assigned to plurality of computer platforms are maintained in said computer resource table (col. 3, lines 27-29).

27. Claims 15, and 19-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsu (U.S. Patent 6,104,721) in view of Odhner et al (U.S. Patent 6,862,623 B1), and further in view of Lea et al. (U.S. Patent 6,314,447 B1).

28. As to claim 15, Hsu teaches the invention substantially as claimed including teaches:

Receiving a first task requiring processing, wherein a first processor load value is associated with said first task (col. 6, lines 12-18; col.12, line 65-col. 13, line 5);

Assigning said first task to said first computer processor (col. 3, lines 20-22, lines 32-35 and lines 45-52; col.6, 30-32; col. 10, lines 11-14; col. 13, lines 37-42), wherein said first processor load value is less than said first capability of said first computer processor (reading updated processing bank status information form a table to determine whether processors of processing bank are currently available to satisfy the call setup request, col. 6, lines 13-30; col.13, lines 6-20); and

Processing said first task using said first computer processor (processing proceeds in which the controller selects the proper processor to service the incoming service call, col.6, lines 26-32; col. 13, lines 14-17, and lines 43-46).

29. Hsu does not explicitly teach that dynamically specifying a first maximum capability of a first computer processor, dynamically specifying a second maximum capability of a second computer processor; and maintaining a computer processor capability table, wherein dynamically adjusted capability values for said first and second computer processors are stored that are related to said first and second maximum capabilities of said first and second computer processors. Howerver, Odhner teaches dynamically specifying a first maximum capability of a second maximum capability of a computer processor (col. 5, lines 14-54; col.11, lines 56-65);

maintaining a computer processor capability table, wherein dynamically adjusted capability values for said first and second computer processors are stored that are related to said first and second maximum capabilities of said first and second computer processors (col. 3, lines 47-64; col. 8, line 45- col. 9, line 19).

30. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teaching of Hsu and Odhner because Odhner's dynamically specifying a first capability of a second computer processor; and maintaining a computer processor capability table, wherein dynamically adjusted capability values for said first and second computer processors are stored that are related to said first and second maximum capabilities of said first and second computer processors would increase the efficiency of Hsu's system by allow tasks to be allocated to corresponding processor based on the capability of processors to enable managed more cost effectively.

31. Hsu and Odhner do not explicitly teach determining that said first processor load value of said first task is greater than said first capability of said second computer processor. However, Lea et al teach determining that said first processor load value of said first task is greater than said first capability of said second computer processor (col. 3, lines 5-19 and lines 32-39; col. 12, lines 7-34 and lines 60-67).

32. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have combine the teaching of Hsu, Odhner and Lea because Lea' s determining that said first processor load value of said first task is greater than said first capability of said second computer processor would increase throughput of Hsu's system by providing the step of determining that said first processor load value of said first task is greater than said first capability of said second computer processor to provide an efficient method for utilizing processing capabilities of electronic devices in a distributed electronic network.

33. As to claim 19, Hsu teaches specifying a task capability associated with said first computer processor and with said second computer processor, wherein a task of a first task type is assigned to a computer processor having a task capability including said first task type, and wherein a task of a first type is not assigned to a computer resource having a task capability that does not include a task of said first type (col. 9, lines 48-56).

34. As to claim 20, Hsu teaches altering a performance characteristic of said first processor, wherein said step of dynamically specifying a first capability of a first computer processor comprises respecifying a first capability of said first processor (col. 10, lines 30-31).

35. As to claim 21, Hsu teaches altered performance characteristic comprises at

least one of a frequency of operation, an operating voltage, and a rate of instructions (col. 15, liens 11-18).

36. Claims 13 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hsu (U.S. Patent 6,104,721) and Odhner et al (U.S. Patent 6,862,623 B1), as applied to claims 1 and claim 22 above, and further in view of Borkar et al (U.S. Patent 6,484,265 B2).

37. Borkar was cited in the last office action.

38. As to claims 13 and 28, Hsu teaches:

Altering a clock rate of a computer resource associated with a computer platform included in said carrier (col.15, lines 11-16).

Hsu and Odhner do not explicitly teach:

Sensing a temperature of a carrier associated with at least one of said computer platforms and altering a maximum load value of said computer platform, wherein a maximum load value of said computer platform is increased if said clock rate is increased, and wherein a maximum load value of said computer platform is decreased if said clock rate is decreased.

39. However Borkar teaches sensing a temperature of a carrier associated with at least one of said computer platforms (col. 1, lines 15-18);

Altering a maximum load value of said computer platform, wherein a maximum load value of said computer platform is increased if said clock rate is increased, and wherein a maximum load value of said computer platform is decreased if said clock rate is decreased (col. 6, lines 16-39).

40. It would have been obvious to one of ordinary skill in the art at the time the invention was made to combine the teachings of Hsu, Odhner, and Borkar because Borkar's Sensing a temperature of a carrier associated with at least one of said computer platforms and altering a maximum load value of said computer platform, wherein a maximum load value of said computer platform is increased if said clock rate is increased, and wherein a maximum load value of said computer platform is decreased if said clock rate is decreased would provide flexibility in order to extend the hardware lifetime of the circuit while meeting the challenges of increasing processing power requirements of new data services.

Response to the argument

41. Applicant arguments filed on 4/6/06 had been considered but they are not persuasive. In the remarks applicant argued (1) all of the cited references fail to teach, suggest, or describe providing a computer resources table that has indications of maximum computer resource capabilities for each of the computer platforms. (2) Non of the above cited references teach referencing such a computer resources table for maximum computer resource capabilities. (3) none of the cited references teach,

suggest, or describe maintaining a computer processor capability table where dynamically adjusted capability values for first and second computer processor are stored. (4) none of cited references teach referencing the table to determine whether the first processor load value of the first task is greater that the capability of the second computer processor. (5) the cited reference fail to teach assigning the first task to the first computer processor where the processor load of the task is less than the capability of the first computer processor. (6) the cited reference fail to teach, suggest, or describe a system that comprise a memory including a table for storing fist and second resource amount capabilities of first and second computer platform. (7) the cited references do not suggest a software task allocation unit that is operable to reference the resource amount capabilities in the table and is further operable to allocate a task to one of the first or second platforms based on referenced resource amount capability.

42. Examiner respectfully traverses Applicant's remarks:

As to point (1), Odhner teaches a load table that contains empirically-derived load table values, each load table value representing a maximum load handled by one or more servers (col. 11, lines 56-59).

As to point (2), Odhner teaches a maximum load value is obtained form a pre-defined load table that contains empirically-derived maximum load values handled by servers havving known amount of memory and a processor having known a speed. If the server

does not have a processor speed and memory that exactly matches a load table entry, then the closest match is found (col. 2, lines 29-34; col. 6, lines 41-53).

As to point (3), Odhner teaches the calculation module may use various rules to determine when different resources should be added (col. 8, lines 45-55).

As to point (4), Lea teach the device application may perform a second-level load-balancing process by similarly evaluating and comparing the processing loads of each hosted device to determine the most appropriate hosted devices based on relative processing loads (col. 3, lines 32-39). In addition, Hsu teaches when the processing power of one processor is not sufficient to meet the processing requirements of a service (the processor load value is greater than capability of the computer processor), resource controller select two or more of processors, processor accepts or rejects call assignment based on the contents of field of LRC table (col. 9, lines 64-65; col. 10, lines 41-46).

As to point (5), Hsu teaches reading updated processing bank status information form a table to determine whether processors of processing bank are currently available to satisfy the call setup request, and transmitting control signals to processing bank to process the tasks col. 6, lines 13-33; col.13, lines 6-20).

As to point (6), Hsu teaches the LRC table in local memory (col. 14, lines 51-54). The LRC table including a service type field, a service definition field, a module functions field, and a resource usage status field. Service type field is used to store data representative of the service type of a service call currently assigned for processing by the processor corresponding to the LRC table (col. 9, lines 41-46).

As to point (7), Hsu teaches the resource controller implements resource control functions by pointing a position on the local resource control table to dynamically allocate resource of processing bank to the call setup request (col. 3, lines 5-8, lines 39-52).

43. **THIS ACTION IS MADE FINAL**. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Allowable Subject Matter

44. Claims 16 and 18 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

45. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Camquy Truong whose telephone number is (571) 272-3773. The examiner can normally be reached on 8AM – 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Meng-Ai An can be reached on 571-272-3756. The fax phone number for the organization where this application or proceeding is assigned is 571-273-3756.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR of Public PAIP. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIP system, contact the Electronic Business Center (EBC) at 866-217-9197(toll-free).

Camquy Truong

May 31, 2006

SUPERVISORY PATENT EXAMINER